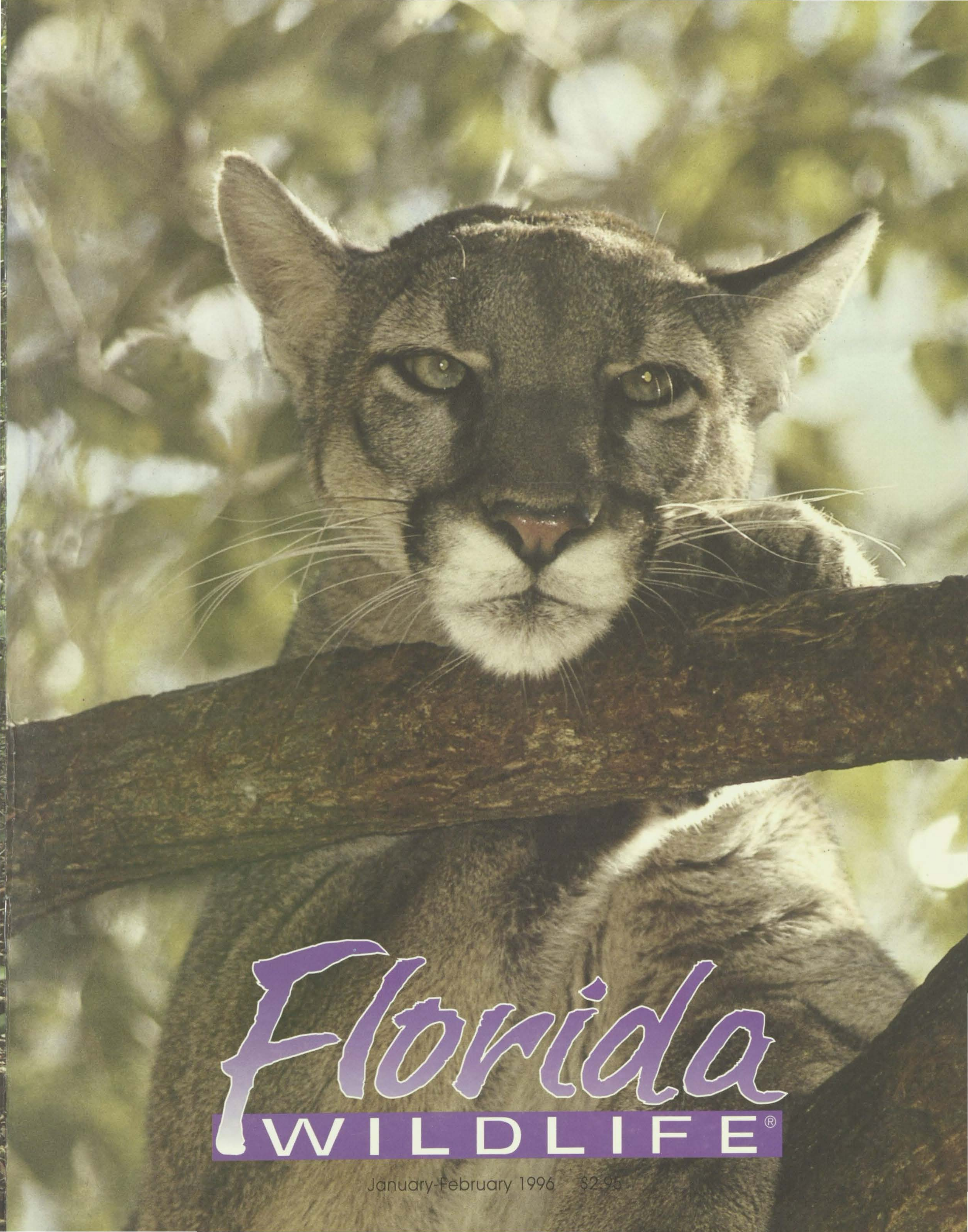

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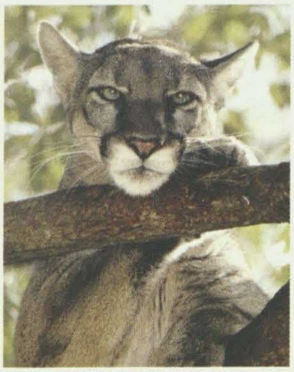

Front Cover: A dramatic photo of female panther No. 204 napping in a tree was photographed by Bill Greer.

Back Cover: Jeff Ripple's photograph of a gumbo limbo tree in the tropical hardwood hammock in the Everglades.

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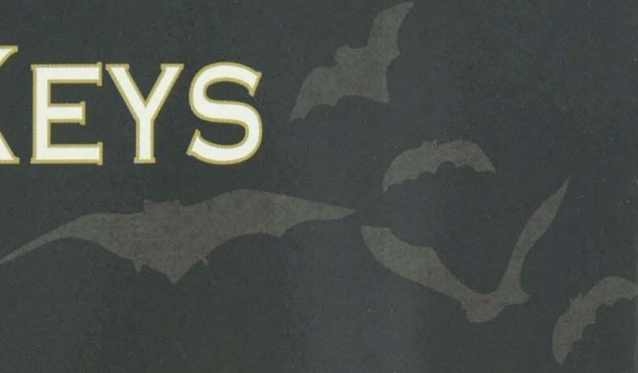
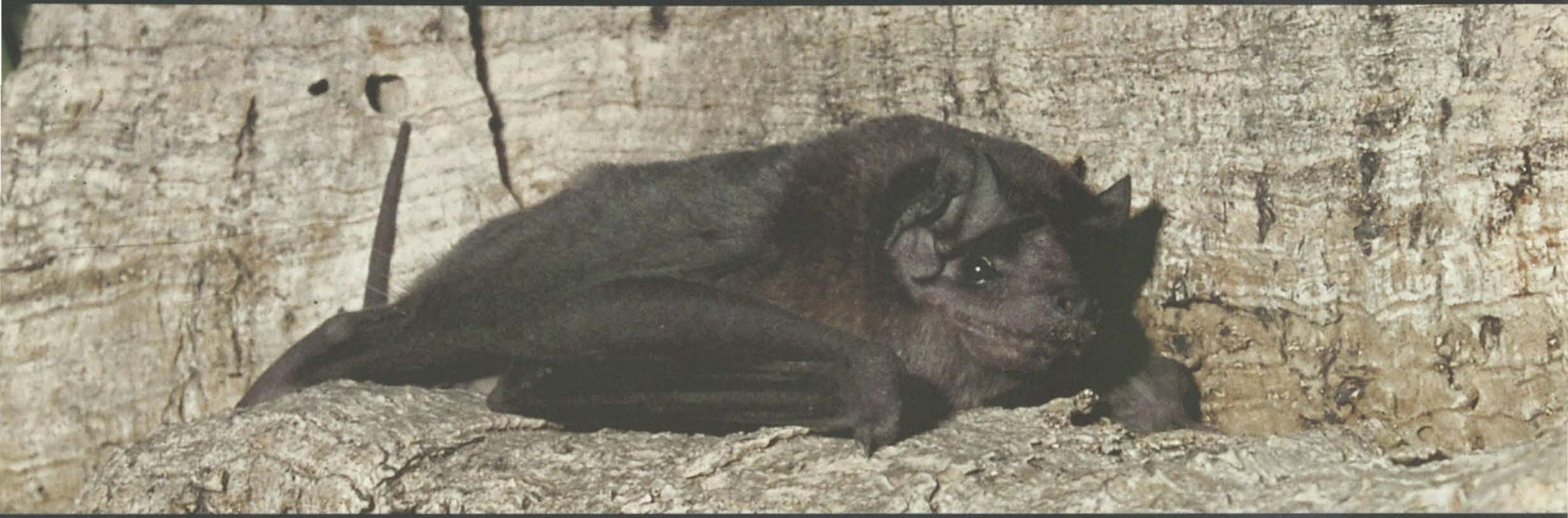
FIRST BAT COLONIES IN THE KEYS



By Frank H. Adams



JIM EDDS

Early one windy evening, I'm working along with a wildlife researcher and a couple of friends who are using an enormous, fine-meshed net to try to catch bats sporadically zooming from a condominium roof in the Florida Keys. Propelled by winds from a distant Hurricane Opal, the bats shoot away like rockets, evading their would-be captors.

By the time we roll up the net, about 80 Cuban house bats have flapped out into the darkness to feed – on insects – not the blood of innocents. Just by being here these tiny bats have made it into the record books.

"This is the first scientifically confirmed colony of bats in the Florida Keys. And this is the first time a colony of Cuban house bats has been confirmed in the United States," says Phil Frank, the biological researcher who heads the Game and Fresh Water Fish Commission's field office in Marathon.

And this is not the only colony of Cuban house bats in the Keys. There are two more: one on Stock Island with about 100 bats, and another on Boca Chica Key that has 300.

Confirming the presence of creatures that weigh only 14 grams is a weighty matter for Frank. At the age of 34, this may have been the biggest find of his career, except for the fact that he has also confirmed that the Antillean fruit bat has made it to the Keys.

"This is the first confirmed finding of any fruit bat in the U.S.," Frank says. "I was very excited when I found them. It was the mother lode."

These are the first new bat species to be confirmed in the United States since 1967, when a single individual of a species of vampire bat was discovered in Texas, according to Karl F. Koopman, of the American Museum of Natural History in New York City.

Frank's findings have drawn the scholarly attention of noted bat experts, such as John Whitaker, a professor at Indiana State University. "That's two brand-new species of bats in the United States," Whitaker says. "It's always neat to find something new anywhere."

Antillean fruit bats feed on fruit-bearing plants as their name implies, and generally range through the Caribbean basin. Considered to be big bats, they weigh between 27 and 45 grams, and their wingspread can reach 450 millimeters.

While they do eat fruit, most likely they don't pose a threat to cultivated varieties. They seem to prefer wild fruit, like the strangler fig, which grows in the Keys.

There have been anecdotal reports of Antillean fruit bats in the Keys during the last 100 years. But none had been scientifically confirmed by outside authorities. In the view of science, no confirmation means no bats.

A 1983 report of an Antillean fruit bat initially seemed to be a shoo-in to scientifically prove bats had in fact, arrived in the Keys. But this was only backed up by a photo. When the report of the bat and photo were published, two Florida mammologists, Stephen Humphrey and Larry Brown, shot it down.

Since previous reportings of bats in the Keys have not been accompanied by a bat's body for confirmation, they have been regarded by the scientific community as something akin to UFO sightings.

"That was a case of an observation that wasn't verifiable," says Humphrey, a mammologist at the University of Florida. "He had a photograph of some animal and you can't tell from the photo what genus or species it was."

Humphrey asserts that the 1983 claim of a colony of fruit bats in the Keys just won't fly. "It was an exaggerated claim of a population. It isn't clear that the Keys can support a fruitivorous animal.

"It sure is exciting that there is a verified population of bats. It was fortunate there was someone there who knew what it meant and how to record it."

In the realm of scientific discoveries, all claims are viewed with extreme skepticism until they are proven to colleagues beyond a shadow of a doubt. Since previous reportings of bats in the ▷

FRANK H. ADAMS

Like Gulliver with a Lilluputian, Phil Frank holds a Cuban house bat.

Keys have not been accompanied by a bat's body for confirmation, they have been regarded by the scientific community as something akin to UFO sightings.

All of this scientific intrigue covers a short time in the natural history of the Florida Keys. Nobody knows if there were bat colonies there before the coming of Europeans.

What is known is that in 1929, Richter Clyde Perky had great interest in attracting bats to the Keys. His interest in bats was not the stuff of grade B horror movies, but centered on using them to control clouds of the Keys' voracious mosquitoes.

Perky had bought 25,000 acres of land on Sugarloaf Key and aimed to make a heap of money developing it. That was in the age before pesticides, so Perky wanted to enlist bats to control the bugs.

He spent $10,000 to build a 30-foot-tall wooden bat tower on the key, hoping hoards of bats would roost there. No bats ever showed up, but the tower still stands, giving mute testimony to an enlightened view of bats.

Ironically, even though there are at least three known bat colonies in the Keys today, not a single individual has roosted in Perky's bat tower. Maybe someday, the tower will catch the eye of just the right bat species, and the structure finally will have some of its intended tenants.

Being dubbed "children of the night" by movie versions of Count Dracula, and generally having faces only a mother could love, bats have been feared and misunderstood by humans for ages. In many western countries, people associate bats with vampires, evil and rabies.

But the organization Bat Conservation International fights this image with vigor. One of their pamphlets says, "only a small fraction of bats contracts rabies, and our concern about them should be no different from those we apply to other wild animals."

With the zeal of apostles, BCI works to convert people from fearing bats into loving bats, pointing out that bats which feed on insects reduce the toll on agriculture, while herbivorous bats help pollinate plants.

While there are some species called vampire bats, they are not the villains of the silver screen. Ranging through South America, Mexico and the Caribbean, vampire bats need about two tablespoons of blood per day, which they get from large sleeping mammals, like cattle. But unlike movie vampires, they don't kill their victims or recruit them into the ranks of the undead.

Cuban house bats feed on insects while they erratically dart around the night skies. "They do eat some mosquitoes, but they probably eat more moths and flies," says naturalist Karl Koopman.

While they do nest in natural

JIM EDDS

On the ground in front of its roost in the condo, this Cuban house bat hobbles on its folded wings.

Even though this Antillean fruit bat sports ferocious-looking teeth, it's a vegetarian.

habitats, they are commonly found in houses, particularly where there are very small spaces between ceilings and roofs. And that brings us back to the condominium on Marathon.

Once again Frank and the rest of us are back at the same condominium trying to catch some Cuban house bats, while the gray fingers of evening seem to nudge the last blaze of the sunset over the horizon.

This time there is little wind and the bats don't blast away from the building like they were bound for the moon. Instead they drop from the top of the condominium a few feet before they pick up enough speed to start flying.

Our hopes of catching one with the mist net rise. But after about a dozen have taken off on their nightly rounds, we still haven't caught one. Nobody says so, but we silently wonder if we will get skunked again.

Then one dives from the building, starts flapping and flies right into our net. Now we can take a closer look.

My first impression is that it's hard to believe how small it is. When in flight, they look much larger, appearing to have wing spans of well over a foot and bodies at least 4 inches long. This one's entire body is scarcely larger than my thumb.

While Frank gently untangles the tiny bat from the mist net, it gamely tries to bite through his leather gloves. We have to admire its pluck, after all, it's fighting a creature that is 74,000 times its own weight.

During the bat's struggle she emits Lilliputian screams. Even though she's in no danger, she doesn't know that.

First Frank holds her while I shoot photos. Then he puts her down, and each time I shoot, she looks into the camera. Sometimes she tilts her head and cocks an ear.

And amazingly, through watching her facial expressions, I seem to see a personality emerge. The bright little eyes of this minuscule mammal make it look inquisitive and I am charmed.

Finally we back away from her to let her go, and she crawls away from us, bat style, pulling herself forward with her bent wings. Frank gives her a boost into the air, and she flies away into the night.

The idea that a couple of new species of mammal have made it into Florida is appealing. Sometimes it seems like most of the new species we hear about through the media are weeds from hell that choke out native species, upsetting the state's natural balance. At least these tiny bats provide a valuable service by eating mosquitoes.

Now that Cuban house bats have established a beachhead here, will they be able to integrate into the Keys' ecosystems and become permanent residents? Or will their presence here merely be transient like the 40 million human visitors the state gets per year? Only time will tell.

Frank Adams is the associate editor of FLORIDA WILDLIFE.

Running the River For SHOAL BASS

Text and Photograph by Gray Bass

One of the enjoyable things about fishing in fast river water, besides the chance of catching some great fish, is the water itself. All that churning, swirling motion, with eddies and small whirlpools, and reflected sunlight dancing off the surface, makes the day a success right from the start.

And there's something about the sound of fast water that people find fascinating. Whether it's a full-throated roar, a rumble or a running, sloshing murmur, fast river water is hypnotic and soothing.

Many people may think that fishing in fast water is something you can do only outside of Florida. But for people who venture to two rivers in the Panhandle, the Chipola and the Apalachicola, such is not the case.

These two rivers have sections with shoals, where the river bottom is a little higher, and the water faster than what most rivers in this state offer. And they offer something else: the treat and challenge of fast-water fishing for shoal bass.

"It's a little tougher than lake fishing. It's real swift water. In the river system they're probably a little tougher to pull in because of the currents," says Dave Yeager, a biologist with the Game and Fresh Water Fish Commission's Blackwater Fisheries Research and Development Center in the Panhandle community of Holt.

"Since these are listed as a species of special concern by the GFC, I would recommend catch and release," Yeager says. "Get them back in the water as soon as you can. If you want to take pictures, that's fine.

"Normally the less handling the better. Grab the fish by the lower lip with one hand, and unhook it with the other and release the fish. They don't have any sharp teeth to clamp down on you."

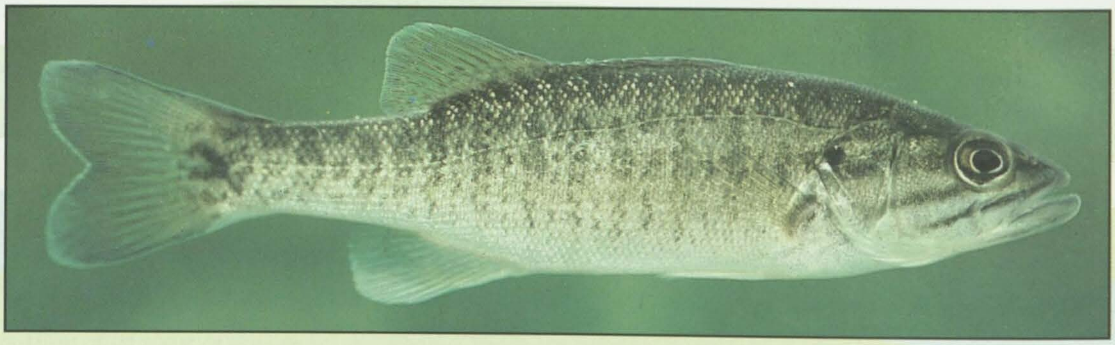
Shoal bass are strictly stream dwellers and are closely associated with rocky shoals, a characteristic which provides their common name. Some anglers and biologists also call it the Chipola bass, Flint River bass, Flint River smallmouth or Apalachicola redeye bass.

Generally smaller than largemouth bass, shoal bass seldom exceed 15 inches in length. But they can reach over 20 inches.

Their average weight is about a pound, but the largest confirmed weight for one was over 5 pounds. And an unconfirmed weight of 7 pounds has been reported.

Crayfish are the principal food of shoal bass, although they also eat fish and aquatic insects. And like any adaptive critter with a belly to feed, it also will strike targets of opportunity, such as lures cast their way by crafty anglers.

"We use beetle spin and spinner bait, on 6- to 10-pound-test line, but 6-



to 8-pound-test line is probably best," Yeager says.

"We usually find some shoals in the Chipola, get above them upstream, and cast down into the shoals. Or we just drift down over the shoals and cast," Yeager says.

"Where I've fished for them there is a fairly deep channel that runs through the shoal area and we just drift down the channel and cast up into the shoal area," Yeager says. "One problem in fishing for them is you can damage your boat and props because the current's swift," which can shove your boat or prop into the shallow, rocky bottom.

That's why shoal bass anglers drift most of the time. People will normally drift, but will use the trolling motor to stay in deeper water.

"It's kind of a specialized fishing because of the way you have to work the shoals. I don't think too many people are used to that type fishing in Florida," Yeager says.

When casting for shoal bass, Yeager recommends casting toward the bank, and using a medium retrieve. And you don't need to jerk the line, just reel it in steadily.

Once hooked, shoal bass don't fight too much differently from the way largemouth bass do, he says. Sometimes they'll jump, adding a little more action.

Along with the fast water involved with shoal bass fishing, there is another aspect Yeager's heard of that is not all that common in Florida: fly fishing. "That would probably be better to do by walking along the shoals. I've heard of people doing that," Yeager says.

Five bass species swim the rivers of northern Florida. The best-known of these is the largemouth bass, while spotted bass, Suwannee bass, redeye bass and shoal bass are much less common. Of these five basses, only the largemouth bass occurs in the peninsular section of the state.

Fishermen who catch shoal, spotted, redeye or Suwannee bass often call these smallmouth bass because the jaw does not extend backwards past the eye in these species. However, true smallmouth bass do not occur in Florida.

Shoal bass are close relatives of the redeye bass, a species which rarely strays into our state from the upper reaches of the Apalachicola River system in Alabama and Georgia. Shoal bass also inhabit portions of the Apalachicola River drainage, but the largest Florida population resides in the Chipola River, the largest tributary of the Apalachicola River.

Unlike redeye bass, shoal bass have more scales around their tail and don't have white on the upper and lower portions of the tail fin. Shoal bass vary in color from greenish to almost bronze-brown, with rows of dark vertical blotches on their sides. These blotches form irregular stripes, giving this handsome fish a distinctive appearance, and a nickname of tiger bass.

These bass spawn from April through June, usually locating their nests in eddies near shoals, in water from 8 inches to a foot deep. Although they have spawned when held in experimental ponds, they haven't been found spawning in reservoirs, suggesting they prefer to spawn in flowing water.

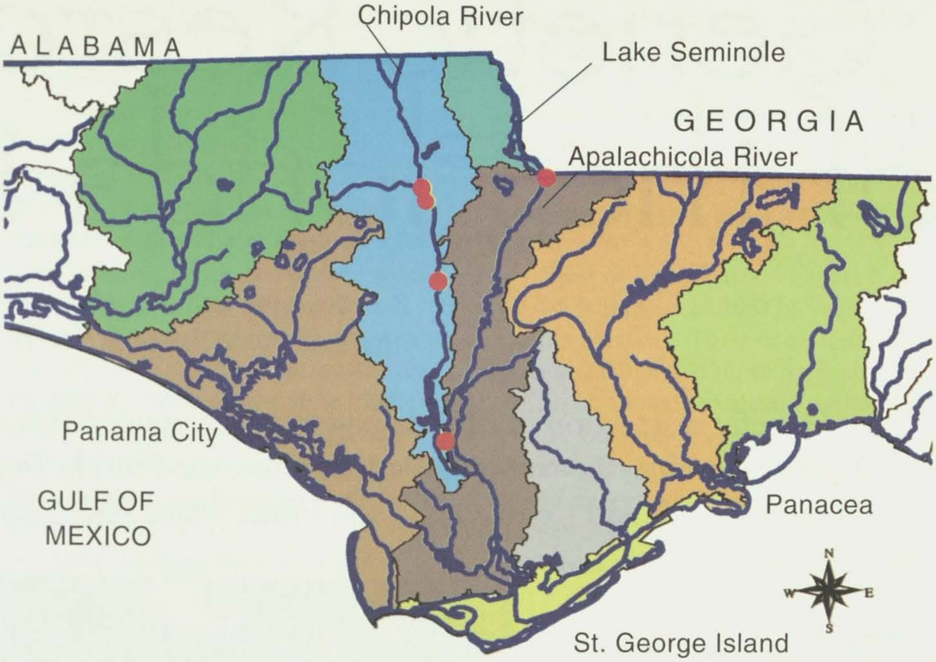
The spawning of shoal bass in experimental ponds at Auburn University has shown it is possible to breed them and rear them in captivity, which could lay the foundation for artificial spawning, should that ever be deemed a good move. "We may possibly look at trying to introduce them in other areas, but we have no definite plan," Yeager says.

An analysis by a researcher at Florida State University found that the biggest threat to shoal bass and other organisms in these Panhandle rivers is habitat degradation from pollution, and possibly siltation from dams. He recommended keeping close controls on pollution and dams.

Currently the Florida population is viable enough to withstand current levels of sport-fishing. The 12-inch minimum size regulation for bass in the northwestern section of the state also provides protection from over-harvest.

For now shoal bass appear to be in pretty good shape in Florida. There are still enough to offer anglers who venture into the Panhandle a test of their skills. And with proper management and conscientious fishing practices, they'll be around for future generations to enjoy, too.

Gray Bass is director of the GFC's Blackwater Fisheries Research and Development Center near Holt.

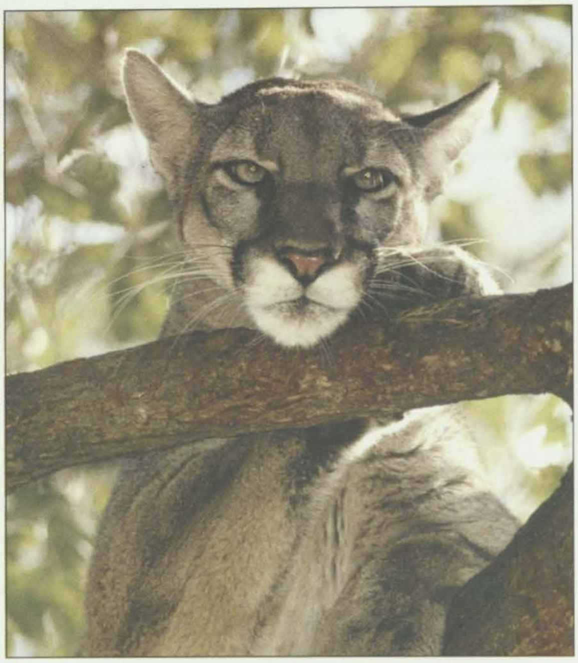


Where to Find Shoal Bass in Florida's Panhandle

Genetic Restoration of the Florida Panther

By Ken Johnson and Darrell Land
Photographs by William A. Greer

Genetic restoration of Florida panthers is a cooperative effort of the U.S. Fish and Wildlife Service, the National Park Service, the Florida Department of Environmental Protection and the Florida Game and Fresh Water Fish Commission.



The cougar from Texas hissed and roared while a group of naturalists unloaded her air-shipment crate, but she didn't bound out when the door was finally opened. The large cat we named TX 107 peered timidly around the corner of the crate until a few hefty shakes and a steep tilt encouraged her first steps into her new home in south Florida. She walked slowly away and vanished silently into the dense palmetto underbrush, wearing a radio collar so that we could monitor her.

This cat was one of eight female cougars caught and moved from west Texas to south Florida to restore historic health and variation of the Florida panthers' gene pool. A century of genetic isolation and inbreeding has contributed to congenital heart defects, kinked tails, cowlicks and undescended testicles in male panthers.

Florida panthers and Texas cougars are two subspecies of the same species. Their ranges once overlapped, and panther researchers expect the Texas females to readily mate with Florida males to produce viable offspring similar to when the populations ranged freely throughout the South.

Lost genetic material will be replaced in the Florida panther population through these matings, and the kittens they produce should not have the detrimental genetic traits. When these offspring mature into breeding adults they will continue the genetic restoration of a healthier, more resilient population of Florida panthers.

The Florida panther is the state mammal and has been considered endangered since the 1950s. Presently wildlife researchers estimate there are between 30 and 50 adult panthers in the wild.

Genetic restoration of Florida panthers is a cooperative effort of the U.S. Fish and Wildlife Service, the National Park Service, the Florida Department of Environmental Protection and the Florida Game and Fresh Water Fish Commission. The project grew out a decade of intensive research of life history and biomedical aspects of the small panther population in South Florida.

An estimated 30-50 adult panthers range over about 4,844 square miles of habitat. Adult male home ranges average more than 193 square miles and usually overlap home ranges of several adult females that average just under 77 square miles in size. Panthers prey primarily upon deer and wild hogs but will also take a variety of smaller animals including raccoons, rabbits, armadillos and alligators.

The panther social order is mediated by an aggressive dominance hierarchy and mutual avoidance system that maintains a relatively stable population within the limited habitat in south Florida. Panthers killing panthers over estrous females or in territorial disputes has become the leading cause of mortality now that panther deaths on highways has been reduced by constructing wildlife underpasses on Interstate 75 and State Road 29. Florida panthers are endangered by a combination of habitat loss and panther population decline.

Biomedical studies have revealed that panthers harbor numerous diseases and health problems that are likely associated with inbreeding. Weakened immune systems and especially reproductive impairments, deformed sperm and heart defects may also have a genetic basis. Even the cowlicks and kinked tails so common for Florida panthers likely result from inbreeding and rapid fixation in the small panther population.

A captive breeding program was begun, as is common in most endangered species programs. As the understanding of biomedical and genetic implications improved, genetic restoration emerged as a more practical approach to Florida panther recovery.

The eight Texas cougars were released at five widely separated locations in the Fakahatchee Strand State Preserve, Big Cypress National Preserve and Everglades National Park. Since their release, some of the cougars have made extended journeys.

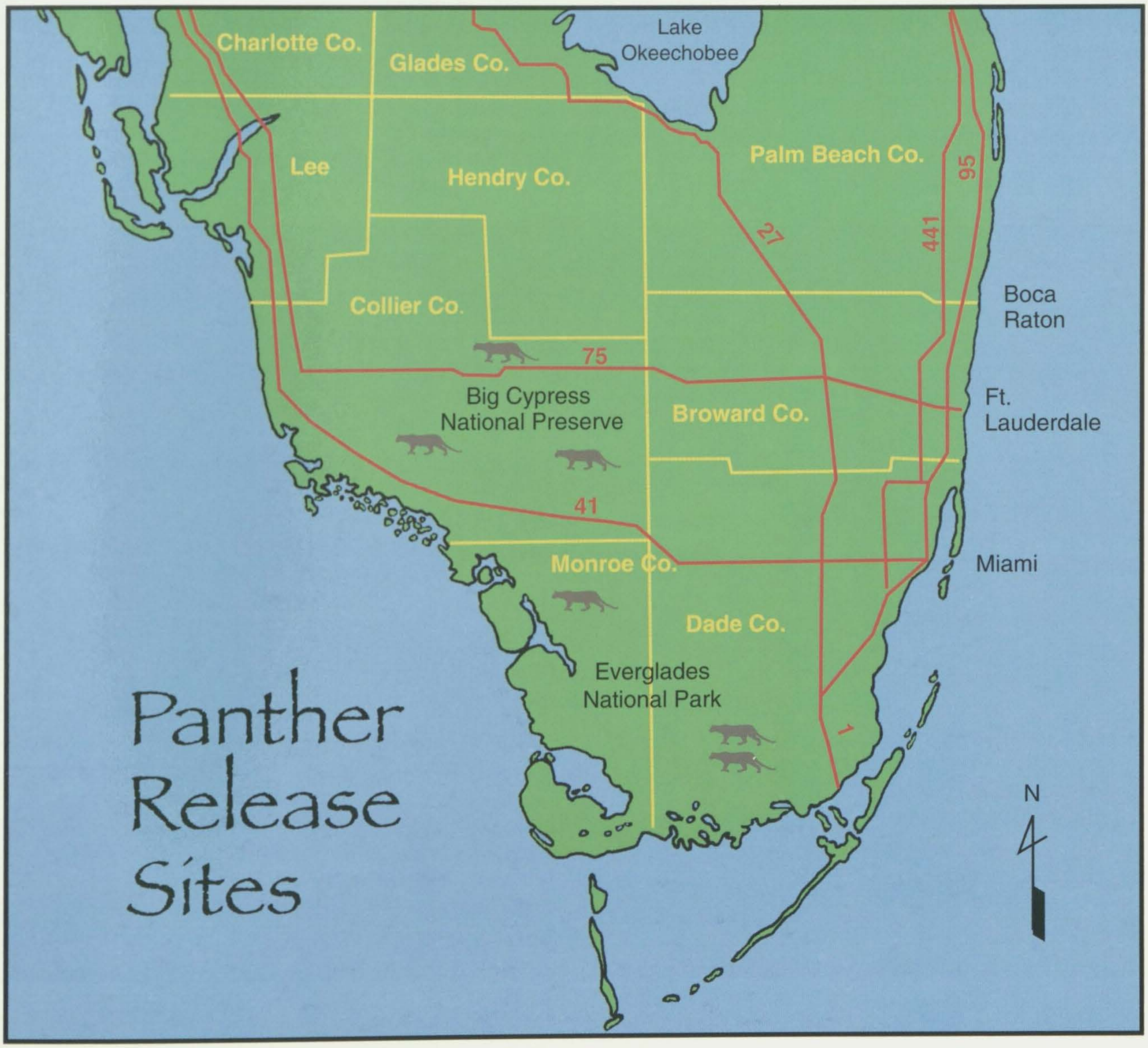
Several of the females moved extensively following their release, but all remained within areas already used by panthers.

One cat traveled through forests and small wood lots along the eastern fringes of Naples, and south into Rookery Bay where she swam to a mangrove island. Later she turned back north, passing through the same areas of eastern Naples, then on toward La Belle. This cougar spent considerable time in suburban areas, but was never reported by the general public. She finally ventured back southeast into the heart of panther habitat in south central Florida where she has apparently settled down.

Other cougars were a bit more sedentary. Both cougars released in Fakahatchee Strand have remained in the vicinity. Two of four cougars released in Big Cypress stayed in the preserve and both cougars released on Long Pine Key in Everglades National Park remained on this drier island, surrounded by unusually high water levels.

Most of the released cougars have moved within areas used by resident Florida panthers. Their occasional movements outside those areas are typical of animals exploring unfamiliar terrain. Once these cougars learn the boundaries of their new habitat, they should move and behave in a similar manner to Florida panthers.

Interactions have occurred between ▷



P. PERKERSON

the released Texas cougars and male and female Florida panthers. Cougar TX106 was in the company of a 3-year-old male Florida panther, number 54, just 10 days after her release. Our hopes were raised that we'd soon have our first litter of new kittens, but she didn't den after the projected 90-day gestation period. Since then this female cougar has been with a 6-year-old male panther, number 51.

Florida panther number 09, a 15-year-old female too old to bear kittens, and TX104 have been together several times on Fakahatchee Strand. TX104 uses two separate areas about 16 miles apart, but while in Fakahatchee she is usually with or near female panther number 09. Texas cougar TX 106 also has been with panther number 09 occasionally.

Social compatibility has been the rule and no displacements or disruptions have been observed in the existing social organization. Social interactions likely have occurred between Texas cougars and uncollared panthers. Only time and close observation will reveal just how these social interactions and genetic restoration unfold.

A habitat conservation program also is being implemented to complement genetic restoration. This program is designed to assist private land owners with conservation incentives to manage their lands in a healthy blend of agricultural production and good panther habitat.

Panther habitat occurs south of Caloosahatchee River and Lake Okeechobee in the sparsely settled interior of the Florida peninsula. This area includes large blocks of low-lying public land such as Everglades National Park, Big Cypress National Preserve, Fakahatchee Strand State Preserve and the Florida Panther National Wildlife Refuge.

Significant private lands, primarily used for cattle and crop production, lie on higher and more productive ground to the north of the large block of public lands. These private lands constitute some of the most important habitat for Florida panthers, and successful panther recovery can not be accomplished without working hand in hand with private land owners to maintain a healthy balance of land uses in south Florida.

We will continue to monitor the interactions and behavior of our eight translocated Texas cougars and the Florida panthers to evaluate this important recovery effort. The recovery of Florida panthers is a complex and long-term endeavor, but the opportunity to handle our first litter of tiny spotted fur balls with milky blue eyes, fat bellies and long, unkinked tails will keep us waiting and watching eagerly. Still we know the work will be difficult and demanding, but we will persevere because we also know that we have every ingredient necessary for success.

Ken Johnson is a biological administrator and Darrell Land is a biological scientist in the GFC's Big Cypress Wildlife Field Office.

Lost genetic material could be replaced in the Florida panther population through matings with recently released Texas cougars.

Game and Fresh Water Fish Commission Spearheads Panther Restoration

By Henry Cabbage

For nearly 20 years, the Game and Fresh Water Fish Commission has spearheaded the complex, multi-agency effort to rescue the Florida panther from the threat of extinction.

This began with founding the Florida Panther Clearing House in 1976 to investigate reports of panther sightings. That was to determine whether the cats still existed in Florida after centuries of persecution and habitat loss. The conclusion: yes, but only in the southern tip of the peninsula.

Tom Logan, head of the GFC's Bureau of Wildlife Research, said researchers first concluded that panthers were still in the "Hole in the Doughnut" and "Raccoon Point" areas of southern Florida's Fakahatchee Strand State Preserve. Later research confirmed panthers were in the Big Cypress National Preserve, Everglades National Park and occasionally elsewhere in south Florida.

"Then in 1980 we designed our first hands-on research," Logan said. "We captured two panthers and radio-instrumented them (fitted them with radio collars that enable scientists to track their movements) to learn about their biology, life history and requirements."

Radio-instrumentation is still the primary method of studying the big cats. To date, scientists have fitted five dozen panthers with radio collars and plotted 30,000 spots frequented by the animals.

For years, scientists approached the Florida panther subspecies (*Felis concolor coryi*) as a unique animal that should be kept isolated from other cougar subspecies. But genetic research eventually revealed that isolation had led to inbreeding which caused reproductive and heart abnormalities. Those problems could be overcome only through re-establishment of the natural flow of genetic material from other sub-species such as western cougars.

Meanwhile, researchers have conducted studies to evaluate the effects environmental contamination might have on the cats, and to measure the impact of human use of panther habitats. Also, scientists studied the panther prey base, which consists mostly of wild hogs and white-tailed deer, and drew conclusions about which lands should be purchased and maintained in a natural state to help sustain the panther population.

"We also released a group of western cougars in northeast Florida as surrogates for the panther to determine whether it would be feasible to establish a panther population there," Logan said. "The report concerning other potential sites for establishment of panthers is due out in January."

In 1986, the GFC teamed up with the U.S. Fish and Wildlife Service, the National Park Service and the Florida Department of Natural Resources (now called Florida Department of Environmental Protection) to pool their resources and expertise to save the panther.

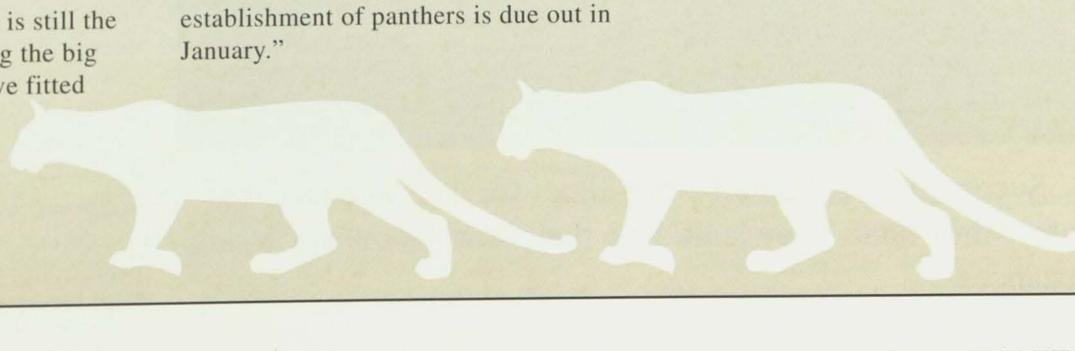
What has become increasingly apparent is that the future of the Florida panther lies in the hands of private landowners who need incentives if they are to keep their lands in a natural state for the sake of wildlife.

Wildlife authorities are trying to deliver tax breaks, payments, easements, simplified permit requirements and longer-term permits to landowners to encourage them to participate in habitat preservation.

"We are encouraged by the spirit of cooperation that has surfaced as a result," Logan said.

He said 12 committees have joined in a planning process that has resulted in an ecosystem management plan that may be the answer to the struggle to save one of Florida's most treasured wild animals from the real threat of vanishing forever.

Henry Cabbage is a public information director in the Commission's Tallahassee office.



The Ancient Art of Bowhunting

By Stan Kirkland

CARL WILE

Successful bowhunters often shoot for days and months before they hunt. They learn how their bow shoots at varying distances.

Watching through the cold misting rain, my eyes were riveted on the buck. Even at a distance of more than 100 yards I could see his antlers while he walked along the fence. After a few seconds he jumped the fence and headed toward me, but was shielded by a tangle of honeysuckle vines and small trees.

Several minutes later the seven-point buck stepped from the thicket only 25 yards away. He walked immediately to a large eastern cedar, put his head down to check his scrape, and when he did, I drew my bow. I quickly settled on a spot behind his shoulder and released the arrow. In a split second the arrow found its mark. The buck crashed away but didn't go far.

I had taken one of our country's most sought-after big-game animals with an ancient hunting method that uses cutting-edge gear. I've often reflected since that day on how fortunate I am that I can hunt with a bow and arrow.

My introduction to bowhunting came in 1978. One afternoon after arriving home from work, I noticed a young guy about my age shooting his compound bow in a vacant lot next to my apartment complex.

I watched the guy shoot and was impressed with his skill. He was about 20 yards from the target and consistently placed his arrows in a small, two-inch circle. Before long, I got a bow and was shooting at the same target. During the time it took me to achieve any consistency, my new-found friend and I decided to hunt together during the upcoming season.

At that time archery season in the panhandle opened in late September. Well before daylight on opening day, he took me to a horseshoe-shaped pocket of slash pines in the Moore's Pasture Wildlife Management Area, in Bay County north of Panama City. My friend put me in a choice spot and withdrew to his place up the pocket.

After climbing my ladder stand, I watched the pocket in the direction my friend had told me, and wondered how the hunt would go. A few minutes later my heart rate quickened when I spotted a fat six-point buck headed my way. The buck came to within 20 yards and stopped, completely unaware I was around. I could almost taste him.

The trouble is, I was so nervous that my arrow started clattering on the arrow rest when I drew my bow. When I finally released the arrow, I missed miserably.

Far from being discouraged, though, I wanted more. I caught a case of buck fever and was hooked on bowhunting.

After some good-natured banter and lunch, we hunted another place nearby that afternoon. Within minutes of getting into my tree stand at 2:30, a gorgeous eight-point passed within 25 yards of my stand, then moved to an oak ridge behind me. Naturally this happened while my bow lay at my feet.

My first day of bowhunting was incredible. Even though I didn't kill a deer, I at least had the chance with two bucks cruising by. While I've never had the chance again to take two bucks in a day with a bow and arrow, I have killed bucks or does on several occasions.

While I certainly don't consider myself a bowhunting expert, new or novice bowhunters would do well to consider several things to improve their chances of success.

The first thing any aspiring archer should do is find a good archery or sporting goods store where they outfit you with the right equipment. You need a custom match between your needs and the bow's draw weight and length. You also need arrows with the right length and stiffness, and hunting broadheads and practice points that weigh the same.

Another necessity is a target for practicing. Most targets today are either straw mats, styrofoam blocks or realistic-looking deer made from neoprene.

With bowhunting, target practice is vital. Most people simply can't shoot a bow under hunting conditions by practicing one or two times for 30 minutes. Whether archers are after whitetails, wild hogs, elk or other game, they owe it to their quarry and the fraternity of bowhunting to make a good shot and a clean kill.

As in business, the key to success is location, location and location.

Successful bowhunters often shoot for days and months before they hunt. They learn how their bow shoots at varying distances. And they practice shooting at ground-level targets from elevated positions to simulate what it will be like to shoot from a tree stand.

Shooting at a target at ground level from five yards is no big deal, but when you're 15 feet up an oak tree and a record buck walks near your stand, prior practice from that height will probably make the difference between going home with venison or just a story.

Scouting and putting your tree stand in a good spot is vital. As in business, the key to success is location, location and location. You can hunt deer in the best-looking place in North America but if deer aren't using it, you're wasting your time. I believe strongly in finding routes deer use between their feeding and bedding areas.

While I'm scouting, and especially during the archery season, I really concentrate on locating what deer are eating. Deer love acorns in the fall. In any area of good deer numbers you should find plenty of signs around stands of oaks. When you scout under oaks with falling acorns, look for numerous deer tracks, deer pellets (fecal material) and even young saplings bucks have ribbed, to show you the best place to hang your stand.

Be sure to check around persimmon and crab apple trees. The fruits of both trees drop during the fall and are favorites of the whitetail. The first time I killed a deer with my bow, I shot a big, plump doe while she stood eating crab apples.

Beginning bowhunters should also be aware of their scents and wind direction. Old-timers will tell you that even those who are extremely diligent about their hygiene can be quickly snooped out by a wary whitetail. That's why experienced hunters generally try to locate their tree stands downwind of any place they think deer will pass by.

Aspiring bowhunters may also want to attend the Game and Fresh Water Fish Commission's six-hour bowhunting mini-course. It's open to people who have completed the standard 16-hour hunter education program, and offers valuable insights to bowhunting students.

Befriending experienced bowhunters is one of the greatest ways to learn about the sport. After all, hunting is more than just reducing an animal to the bag - it's about spending time with companions in the outdoors and learning the ways of wildlife.

When he isn't bowhunting, Stan Kirkland is the public information coordinator at GFC's Northwest Region.

Meet Susan Cerulean

Watchable Wildlife Coordinator

Text and Photograph by
Dick Sublette

The Game and Fresh Water Fish Commission is branching out to formally recognize and coordinate the increasingly popular activity of viewing wildlife. Last September, Judy Gillan, GFC education coordinator, selected Susan Cerulean as the Commission's first watchable wildlife coordinator.

"There are lots of artificial barriers between us and our natural habitat, yet people yearn to be in touch with nature and wildlife," Cerulean noted. "Our job is to invite people into closer contact with Florida's wild places and the creatures that live there, and at the same time to make sure sufficient protection is in place for the wildlife.

"We have done a number of surveys to find how we may better serve the people of Florida in this area," Cerulean explained. "It's clear that the interest is there. Sixty percent of Floridians reported that they fed birds, squirrels or other wildlife during 1994, and 36 percent watched birds. Those are phenomenal numbers."

The new Watchable Wildlife Program will step up the GFC's efforts to support bird watching, bird feeding, nature study, photography and other related recreational activities. Gillan stated, "We've been thinking about a watchable wildlife program for more than five years. I'm excited that now we can better serve this growing group of wildlife enthusiasts with inside viewing tips and new tools."

Cerulean hopes to develop festivals and celebrations throughout the state for creatures such as the Southern bald eagle, migrating birds, butterflies and others. "We will have to amplify the ethics of watching wildlife at the same time, so that Florida's sensitive habitats will not be further jeopardized."

Cerulean pointed out that annually 40 million tourists come to Florida, a large potential market for watchable wildlife. "There is a huge economic benefit to Florida for eco-tourism, nature-based touring."

Cerulean believes that education is vital if we want to have successful conservation. "Most people don't have a clear sense of what nature is all about in Florida," Cerulean said. "It's fundamental that we help our ever-changing human population relearn nature, help them interpret what they are seeing, and how they fit in. Watchable wildlife programs are one way to do this.

"In return, we want to develop a sense of stewardship among Floridans. We want to channel many more volunteers into Project WILD, our wading bird and shore bird protection networks, and into every conceivable type of conservation. The development pressures on our state absolutely require it."

Florida's first watchable wildlife coordinator is a pioneer in her own right. She first got involved with the GFC in the early 1980s when she was instrumental in planning the Nongame Wildlife Program. Susan observed what other states and volunteer groups were doing in the area of nongame education and protection of the environment, and helped bring the successes of those programs to Florida.

Cerulean edited the early *Skimmer* newsletters for GFC and wrote the popular *Planting a Refuge for Wildlife* booklet and compiled and edited another, *What Have You Done For Wildlife Lately*? She also has contributed a number of stories to FLORIDA WILDLIFE.

Cerulean received her B.S. in biology from Eckerd College, St. Petersburg, and her M.S. in Environmental Horticulture from the University of Florida. With Ann Morrow, she co-authored the *Florida Wildlife Viewing Guide*, published by Falcon Press. She currently is writing a book on swallow-tailed kites.

Dick Sublette is the editor of FLORIDA WILDLIFE.

Delicate BALANCE

BILL LEA

Species: Florida manatee
(*Trichechus manatus latirostris*)
Florida and Federal Status: Endangered

The first time I saw a Florida manatee in the wild was thrilling. A buddy and I were scuba diving in the spring run at Manatee Springs State Park when a huge sea cow slowly materialized, swimming upstream and casually munching aquatic weeds. While I waved at my partner to look at her, another manatee appeared.

A few weeks later that gravid cow gave birth to a manatee calf, hopefully providing fuel for future generations of manatees. Unfortunately, the question is in doubt of that calf surviving to become an adult and helping perpetuate the species.

The death rate for infant manatees in this decade is double the rate of the 1980s. So far during the 1990s, the infant mortality rate for Florida manatees is averaging 46 per year, up from the 1980s' average of 23.1 per year.

"Scientists have noticed the increase in infant mortality, but they're not sure why this is happening," says Nancy Sadusky, communications director for the Save the Manatee Club, in Maitland, Florida.

Some people have suggested this grim rise is due to unfit manatee mothers abandoning their offspring. But that may simply mean the mother manatee left after her calf died.

"They may not even be dying in higher rates. Maybe we're just finding more of them," says Scott Wright, the director of marine mammal pathobiology at the Florida Marine Research Institute in St. Petersburg. "You have a lot more people on the water now."

Infant mortality means more than just their subtraction from the overall number of manatees. They are the loss of future breeders, which means they won't be able to make their contributions to their species.

The Florida Manatee, also known as the West Indian manatee, spends a great deal of its time around Florida's coasts, rivers and springs. Only rarely do they cross the open ocean to destinations like the Bahamas.

These distant relatives of elephants can grow to over 11 feet long and weigh up to a ton. When born, young manatees range from just over a yard long to almost 5 feet long, and weigh up to 66 pounds.

Looking like sad-eyed elders, manatees seem to move in slow motion while they graze on aquatic plants. They spend a great deal of time eating, and can consume up to 15 percent of their weight daily.

While naturalists don't have an exact census of Florida manatees, they do an annual count every February. About 1,800 manatees were counted during an aerial survey of Florida's waters last February.

Florida manatees have been on the Endangered Species List since 1973, and show no signs of graduating from endangered to merely threatened in the near future. Habitat loss and human activities are chiefly responsible for these animals' predicament.

Collisions with motorboats are the leading killer of manatees, accounting for 25 percent of their deaths. Another 8 percent of manatee deaths are caused by humans, when manatees drown in fishing nets or get crushed in canal locks, for example.

But not all is bleak, says Kipp Frohlich, a biological administrator with the Florida Department of Environmental Protection. The public strongly supports manatee preservation, he says, by contributing funds to help save the species.

Human activities are the leading cause for the Florida manatee's plight. Many naturalists feel that with foresight and luck, human activities will be what keeps manatees living.

– Frank H. Adams

Snatching the Schaus Swallowtail Back From the Brink

By Frank H. Adams
Photographs by Dr. Thomas C. Emmel

Just outside some specialized greenhouses at the University of Florida in Gainesville, a giant swallowtail butterfly keeps bouncing its gossamer wings off the structure's green bug screens. It's trying to get to the leaves of wild lime trees inside, which are a vital part of a captive breeding program to pull another butterfly back from the brink of oblivion.

The leaves of these trees are the favorite food of both types of butterflies.

Blessed with a keen sense of smell, the giant swallowtail had followed the irresistible scent of the lime trees from hundreds of yards distant. While this would-be interloper is not currently endangered like its distant relative, the Schaus swallowtail butterfly, who knows what the future holds?

But the future these days is looking much brighter for the Schaus butterfly than it has in decades. The breeding program for it is going so well that the head of this project says he likely will recommend it be dropped from the Endangered Species List in the near future.

"I think they will be removed in another couple of years, in 1997 or 1998," says Tom Emmel, the zoologist from the University of Florida behind the Schaus' hopeful comeback. "If that happens, this will be the first invertebrate species to be taken off the list."

Emmel's research has been supported with over $113,000 from the Florida Game and Fresh Water Fish Commission, with additional funds from the U.S. Fish and Wildlife Service and private sources. All hope the Schaus will be downgraded from endangered to threatened. But the GFC's David Cook, who has worked with the project, says that step, "would involve a demonstration that the Schaus swallowtail is secure in a larger range than it has been in decades."

Inside the research building beside the greenhouses appears a scene something like a miniature version of "Invasion of the Body Snatchers." Nearly 1,000 cocoons are metamorphosing until they will emerge from their drab sleep into winged splendor. They are the key to the future of their kind.

How this fight became necessary to save the Schaus swallowtails is a sadly familiar refrain. "Habitat destruction and pesticides did them in," says Emmel.

The Schaus' essential habitat is a tropical hardwood forest, and development has gobbled that up in the Florida Keys ravenously. Most of these woods had been wiped from the Keys by the 1970s, but enough still stood to support the remaining Schaus. Still their numbers plummeted. Researchers found it was due to pesticides used for mosquito control.

Emmel and others fought to get Monroe County officials to avoid spraying in areas vital to the recovery of the Schaus. They were successful, but have had to be vigilant since then to guard the butterflies from overzealous mosquito spraying.

In 1992 a hammer blow from Hurricane Andrew smashed the Keys, blowing prime habitat for the Schaus into splinters. Emmel worried that the butterflies' pupae (cocoons) and their critical food supplies could have been blown away too.

With special permits and a chartered boat, Emmel searched Elliot Key, found no cocoons and saw the Schaus' favorite food, wild lime trees, was buried under debris. He recommended the debris be removed to allow wild lime trees to grow new foliage, and hopefully nourish the survivors, if there were any.

Fortunately, during the previous spring Emmel's team had gathered Schaus' butterfly eggs for their first attempt at a captive breeding program. But even with those, the future for the species was dicey, since no one knew how many would make it to adults and if they would reproduce in the lab.

The next spring researchers found just over 40 adult Schaus butterflies on two of Florida's Keys. The captive breeding program was working, but slowly. There were only 53 adults, making the laboratory Schaus population the largest in the world.

In the wild Schaus butterflies struggle from their cocoons with only three days to live as delicate gold-and-chocolate creations. During that time the females mate and lay their eggs on suitable leaves before they die.

Once the eggs hatch, the larvae, commonly called caterpillars, gorge themselves on leaves for five weeks. Then they wrap themselves up in their cocoons and sleep for 10 months before strutting onto the stage for their brief fling as adults.

On a sweltering day last spring, Emmel and six of his students tromped around selected sites in Key Largo and the southern end of the peninsula distributing 764 Schaus cocoons, the product of the captive-breeding program. They braved clouds of hostile insects, poisonous plants and sweltering heat and humidity, but got the job done.

Then mother nature struck again, driving home the point that saving this species won't be a cakewalk. Birds, including warblers and red-bellied woodpeckers, chowed down on the cocoons, eating up to 99 percent of the cocoons in some areas.

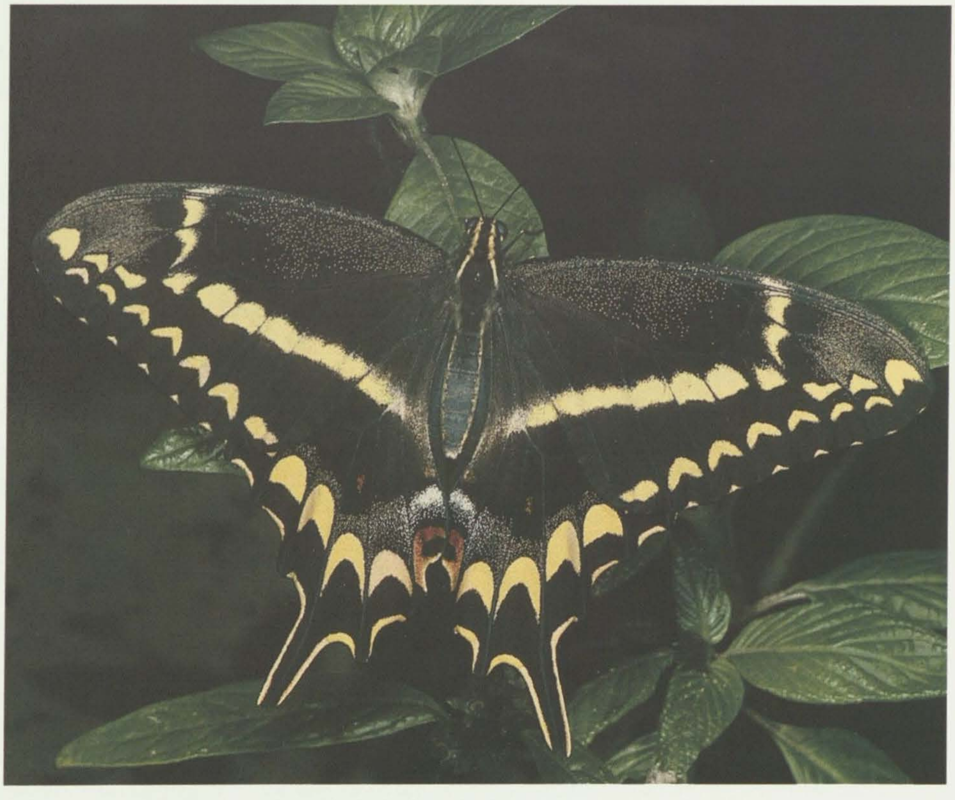
In spite of staggering blows like that, some adult Schaus swallowtails made the passage to adulthood. Emmel's crew found 53 adults at one site, where the females were laying from 20 to 50 eggs per day.

And next year will be even better, Emmel says: "Next year we'll take our pupae to Butterfly World (near Fort Lauderdale) and move the adults down into the Keys as they hatch. That way even if they are predated, they will have laid eggs."

When the small army of butterfly researchers unleashes the delicate swarm of Schaus swallowtails next spring, hopefully this will be a great leap away from extinction. Says David Wesley, from the U.S. Fish and Wildlife Service: "I think it can be a real success story in the not-too-distant future." ◆

Frank Adams is the associate editor of FLORIDA WILDLIFE magazine.

Until it emerges in winged splendor, this Schaus will sleep in its cocoon.



Delicate chocolate-and-gold creations, the female Schaus swallowtail on this page and the male on page 16, live about three days in the wild.

The Queen of Specks

Text and Photographs by Bob Huttemeyer

The guides around Lake Okeechobee don't hand out recommendations lightly. Call it protectionism or call it jealousy; the praise for another doesn't come easily for most of the big names around the Big "O." But there is one person who really gets accolades from her peers, and not just because she is no longer an active guide. Her name is June Boromei, and pros like Bubba Helton and Jim Fowler will tell you straight out that she's "the best darn speck fisherman on Lake Okeechobee."

June Boromei isn't built like a lady wrestler, but she's lean and wiry, even at an age when most of us have started to sport jowls and rings around the waistline. She must have had the strength of a man back in her guiding days, for she will tell you how she would tie a line around her waist, hop into the water, and pull the boat from which her customer was fishing.

She guided some of the real fishing luminaries of their time, anglers like the late Julian Crandall. Back in the days before monofilament became the line of choice for most fishermen, Crandall headed the famous Ashaway Line and Twine Company. Ashaway made the lines that Zane Grey and Ernest Hemingway used to capture those huge marlin and tuna they glorified in their writings, as well as fly lines and the braided black silk lines all plug casters used before World War II.

June loves to tell the story of the day she talked Crandall into a trip for specks. June and Crandall usually managed to choose windy days for their fishing, but one day Boromei found a big concentration of the slabsides in a stretch of weeds near Nubbin Slough.

"I called him and told him to be down at the ramp by seven in the morning and I'd have him back by nine with a limit of specks," she said. He told me he'd heard my bull before and he didn't believe me, but he came anyway.

"We fished the weeds near Nubbin Lock, and after an hour I told him we'd better count the catch because I didn't want to be caught with more than the limit," June said. "We had 96 specks in the box. Crandall said, 'Let's just throw one of the live ones back so as to be good sportsmen, and then go home.' We were back at the dock by 8:30."

There are four basic ways to catch specks: drifting with live minnows, still fishing with live bait under a float, trolling or casting artificials, and what the local anglers call grass-fishing. Boromei is a grass-angler.

June fishes with jigs 95 percent of the time. Her favorites are the 1/32-ounce SuperJigs. "Hot pink was the killer until a few years ago," June said, "but now I do better with bright green. Double tail grubs work well, too." The grubs look like Beetle Spin bodies, and June gets them from the tackle department at a discount store. She prefers to use jigs because, rather than waiting for the float to go under as in live bait fishing, you can feel the fish hit the lure and quickly set the hook.

Boromei's tackle consists of a 12-foot cane pole with the whippy tip removed, or a stiff, two-piece fiberglass pole with 3 to 4 feet of 12-pound test monofilament line. She fishes right in the bulrushes, and the heavy tackle is required to horse the specks out of pretty thick cover. The water is deeper than 3 feet, but when the fish are bedding in bulrushes they are usually only a few feet deep. A longer line would be troublesome.

Specks usually spawn in April, but an exceptionally warm January or February could bring them on the beds sooner. June has caught specks in August that were full of roe, leading her to believe that they must spawn more than once a year. The specks will bed during all phases of the moon, but June says she probably would select the full moon period as prime time.

How do you find the area where the fish are bedding?

" I can smell them," June said. "There is an odor like orange peels. Another tip-off is ibises. If you see them working you can bet the specks will be there."

A concentration of boats, of course, usually indicates a spawning area, but Boromei prefers to find her own fish.

"Specks bent on spawning," she said, "will usually keep moving until they find undisturbed water."

Like most pros, June has a regular routine when she goes speck fishing. She launches her boat at the Lock-Seven Ramp, just off the junction of U.S. 441 and S.R. 70. Her first stop is Eagle Bay, which also provides good bluegill and shellcracker fishing during the summer months. There are plenty of bulrushes to fish around Eagle Bay Island. The specks start biting here in late December and sometimes stay right through the spring.

Next stop is Little Grassy Island, southeast of Eagle Bay. There are three boat runs through Little Grassy. In windy weather June starts fishing the second run, and proceeds to the third run later. There are water lilies as well as bulrushes at Little Grassy, and the hard sand bottom makes this a great spawning area for many species of fish.

Third choice is the east side of Kings Bar. You will often find this listed on charts as North Lake Shoal, but the locals refer to it as the Bar. Bass anglers fish the peppergrass on the west side of the bar and the peppergrass and hydrilla on the bar's north side. But the bulrushes on the east side are the place to go for speckled perch.

While specks may not be much of a game fish they more than make up for their lack of fighting ability by their sweet taste on the dinner table.

June keeps only enough for an evening meal; she never freezes fish. She keeps ice in her fish box, and as soon as she gets home she scales, guts, and removes the head from the fish. After washing the fish in fresh water she dries it, and then rolls the fish in Bisquick. She uses no salt or pepper. The fish is popped into a pan of hot grease and fried until it is golden brown. Slices of lemon are used to garnish a dish fit for a queen.

Bob Huttemeyer is an avid sportsman who frequently writes about his experiences.

Destined for the skillet, this fish was landed by the Queeen of Specks.

Tropical Hardwood Hammocks

By Frank H. Adams
Photographs by Jeff Ripple

Tropical hardwood hammocks have been reduced to a few isolated pockets by human activities. Now, humans are the only ones who can preserve what is left.

One look inside a tropical hardwood hammock in southern Florida tells you this is the forest primeval. Earthy scents and timeless songs of insects and birds hearken back to an age when the Earth was young and humans were strangers to the Florida Keys.

The dense canopy formed by an exotic mix of trees unfamiliar to most people in this country makes this place surprisingly dark, even on very sunny days. It's cooler in here than outside in the blazing sun, and the humidity is so high it even gives them some fire resistance.

Once ranging as far north as Cape Canaveral on the Atlantic coast and the Manatee River on the Gulf of Mexico, tropical hardwood hammocks have been reduced to a few isolated pockets by human activities. Now, humans are the only ones who can preserve what is left.

"Key Largo's hammock is the largest nearly contiguous remnant of a tropical hardwood hammock in the continental United States," says James Duquesnel, a biologist at Key Largo Hammocks State Botanical Site. "What makes tropical hardwood hammocks worth protecting?" Duquesnel asks. "They have an incredibly high diversity of species. And an unusually high proportion of species are listed as endangered or potentially endangered.

"Even now tropical hardwood hammocks are under fire. Habitat destruction is the biggest threat."

During the waves of development that swept through the Keys in the '70s and '80s, many tropical hardwood hammocks were cut down to make way for condominiums and commercial buildings. The loss of sections of forest were not the only damage.

"Fragmentation of continuous habitat, by roads, power lines and condominiums, alters the climate in the hammock," Duquesnel says. "If you create a road, nature wants to create a new type of habitat in which tropical hardwood hammocks don't want to be."

And increased human presence has introduced other threats to hammocks, via dogs and cats. They sometimes make forays into hammocks, preying on natural residents such as the endangered Key Largo cotton mouse.

To save these hammocks, agencies sometimes go beyond preservation and into restoration. The state acquired what was to be the Carysfort development on Key Largo, which had been cleared of trees and had a marina excavated.

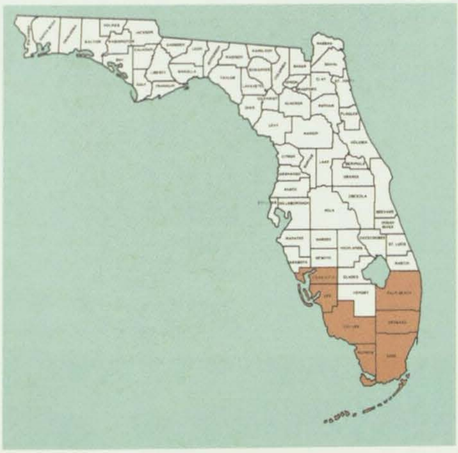
"They're going to fill in the marina and re-plant the trees," says Duquesnel. "So not all the news is bad."

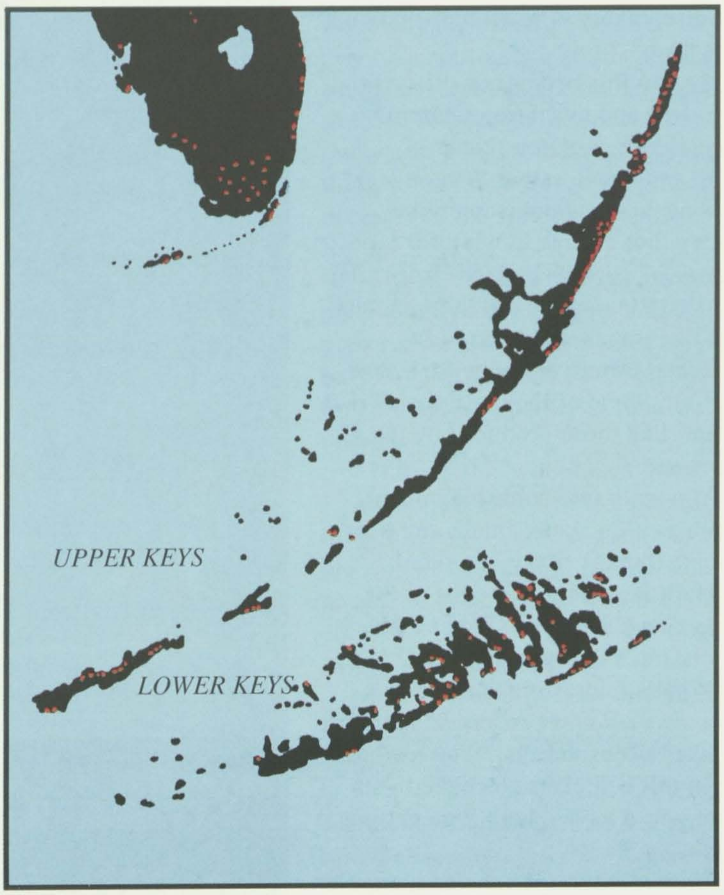
Over 200 species of trees, vines and shrubs blend together to create these forests, some with intriguing names like gumbo limbo, poisonwood, pigeon plum and lignumvitae.

Extracts from lignumvitae have been used to treat tuberculosis and rheumatism, earning it the nickname of "tree of life." And because of its resistance to rot and marine pests, this dense wood also was used for making pulleys, bearings and a host of other products needed on ships.

On the other botanical extreme is poisonwood, a tree as chemically offensive for humans as the lignumvitae is beneficial. One mere touch can leave you with an extremely uncomfortable skin rash and blisters. Yet white-crowned pigeons thrive by eating its fruit. ▷

Tropical Hardwood Hammocks in Florida





The gumbo limbo tree, with its rust-colored, peeling bark, is one of the most distinct members of tropical hardwood hammocks. Caribbean natives used to smear the trees' sticky sap on other trees where beautiful songbirds roosted. The birds would get stuck in the goo, and natives sold them to Cuban merchants.

When most people think of the word "hammock" they picture the kind that is woven from cords and slung between a couple of trees, where people can while away lazy summer days. Hammock in this case is a forest of hardwood trees on land elevated above the surrounding terrain and plants.

In the tropical hardwood hammocks found on Key Largo and elsewhere in south Florida, the forest canopy reaches to about 35 feet. At John Pennekamp Coral Reef State Park, the Wild Tamarind Trail offers visitors a walk under this arboreal ceiling and a good glimpse at the world underneath.

In some places couples of trees of different species bend their branches around each other sinuously, their limbs intertwined like amorous forest spirits. They look so fluid and graceful it's hard to believe the only times they wave about discernably is when the wind moves them.

At night this becomes a different world; dark and mysterious, forcing visitors to rely more on senses of hearing and smell, rather than on sight. Raccoons thrash about, sometimes growling, but always looking for food. Choruses of crickets and tree frogs sing songs sharp enough to cut through what seems like impenetrable humidity.

Scents, primitive and wild, permeate the air. Some of them are not all that pleasant, like those produced by the stopper tree.

"You walk into some hammocks and you smell a skunk smell, and a lot of people think it really is a skunk," says Mark Robson, a biologist at the Florida Game and Fresh Water Fish Commission's Everglades office.

"What's interesting is these hammocks are very open underneath, almost park-like," Robson says. "You tend to think of thick thickets so choked with growth you'd have a hard time getting through."

These ecosystems are also home for some unique animals which are not found on the U.S. mainland. These include endangered American crocodiles, Key deer, Key Largo woodrats, Key Largo cotton mice, white-crowned pigeons, Stock Island tree snails and others.

Some of the growth in Florida's tropical hardwood hammocks includes native mahogany, a fact which surprises some people, who normally associate this beautiful tree with exotic locations. And that fact accents this environment's uniqueness: you see things here you don't see in the rest of the contiguous United States.

Part of that is due to the geographical location of the Keys, and the southern peninsula, and another part is due to the geological foundation under these areas. Coastal locations and nearness to the Caribbean neighborhood allow plants and seeds to ride in on ocean currents or be dropped off by birds.

Suspended on a web, a golden orb-weaver awaits its next meal.

Liguus tree snails climb up their arboreal domain, slowly oozing along.

Created over the ages from the remains of ancient coral reefs and other organisms, limestone formations in the lower peninsula and the keys nurture the region's tropical hardwood hammocks. These formations have little soil, and their geological matrix helps determine what plants will thrive there.

Trees living in these places have shallow roots that snake about limestone formations, seeking food and water in cracks and crevices. The little soil contained in those and on top of the rock formations consists mainly of decayed vegetation mixed with sand and broken up limestone.

Geologists have classified three types of underlying limestone formations in the lower Florida peninsula and the Keys, where tropical hardwood hammocks thrive. These include the Miami limestone, Tamiami limestone and Key Largo limestone.

The Miami limestone supports hardwood hammocks from Miami and Homestead, into Everglades National Park, and in the lower Keys. Tamiami limestone creates the underlying basis for subtropical splendor in the southeastern third of Big Cypress Swamp. And the upper Keys' tropical hardwood hammocks rest on Key Largo limestone.

While the names and zones differ to discriminating scientists these subtleties would elude most casual observers. And regardless of the names applied to them by humans, they all still support Florida's unique plant and animal communities.

Not all news is bad concerning the present health and fate of these biomes. The Monroe County Land Authority, which is responsible for regulating real estate in the Keys, cooperates with the state to purchase parcels of tropical hardwood hammocks.

"In the last 15 months we've bought 222 properties totalling 44 acres," says Mark Rosch, executive director of Monroe County's land authority. "So much of the Keys have already been platted for subdivisions, so we're trying to target the acreage parcels that have not yet been subdivided."

And the GFC lends a hand to preserve tropical harwood hammocks by participating in the state's Conservation and Recreation Lands program, known as CARL. "Commission people go out in the field and evaluate parcels of land for the suitability for aquisition," says Randy Kautz, a GFC biological admistrator.

The U.S. Fish and Wildlife Service has entered the fray indirectly, by trying to preserve as much habitat as they can for endangered Key deer and tree snails before the curtain falls. Preserving habitat for these and other endangered creatures helps save tropical hardwood hammocks, along with other plant communities.

Is our society, with varied and sometimes conflicting interests, able to save what remains of our tropical hardwood hammocks? Yes, but it will mean some adapting on the part of humans who live in and visit the Keys, say many naturalists.

"It's not too late at this point in time, but the Keys are such a popular place to retire, and for second homes, that we're going to have to do something soon," says Barry Stieglitz, manager of the National Key Deer Refuge.

Stieglitz thinks there is a way for people to live in the Keys, and still preserve natural systems. But they will have to give up some of the trappings of urban jungles to preserve some natural ones.

"I think this would be a good legacy to leave for future generations," Stieglitz says. "I take my son out and see Key deer with him and hope he will be able to do the same with his children."

Frank Adams is associate editor of FLORIDA WILDLIFE magazine.

The roots of a gumbo limbo tree grapple with the limestone matrix of Lignumvitae Key State Botanical Site.

Central Florida

Hog Hunting Basics

By Carolee Boyles-Sprenkel

Doug Flott, a former president of the Hog Hunters Association of Florida said he finds hog hunting much more interesting than deer hunting. "To me, deer hunting's like baseball, hog hunting's like football. It's wild, it's rough, it's furious, it's dangerous. But it's a great sport."

To many hunters, short days and cool evenings bring thoughts of big-racked whitetails. But to some Florida sportsmen, the coming of winter means it's time for some of the wildest, most exciting hunting in the state: hog hunting.

Doug Flott, a former president of the Hog Hunters Association of Florida, said he finds hog hunting much more interesting than deer hunting. "To me, deer hunting's like baseball, hog hunting's like football. It's wild, it's rough, it's furious, it's dangerous. But it's a great sport."

Flott said hunters can use two techniques for hunting hogs. "You've got hunting them with dogs, which is the way most of the hog hunters in the state of Florida like to do. Or you can still-hunt them with either a bow and arrow or a gun."

Most hunters use a "trailing" dog to locate a hog, he said. When he wants to run a hog, he rarely just puts the dog out and waits to see what it finds. Instead, he walks until he finds a hog track.

"If I want to run a big hog," Flott said he doesn't release his dogs until he finds a big track.

Many kinds of trailing dogs can follow a hog. "I use a lot of Fantail Walker and beagle, or Plott mix," Flott said. "I've had treeing Walkers. I've had a cross between redbone and black-and-tan and Plott."

For "catch" dogs, most hunters don't use purebred bulldogs. Instead, they rely on mixed-breed dogs with some bulldog in them. Flott said the high-strung temperament of some bulldogs is the major reason to shy away from purebreds.

Once the trail dog has "bayed up" the hog, Flott said, the hunter turns the catch dogs loose. Sometimes the hog will fight the dogs. "I've let some go because they've whipped my dogs."

According to Flott, a team of two good catch dogs can hold a hog. "You get two good catch dogs in what you call, 'latch him down.' One will catch on each ear. Most of the time, that's all it is. They don't chew a hog up like a lot of people think."

Once the catch dogs have the hog latched down, the hunter can approach the animal. Flott cautioned against walking up on catch dogs that aren't well trained, or that you don't know well. "I wouldn't walk up on just anybody's catch dogs, because some of them will turn loose on you," Flott said. "Then you're in a mess!"

Well-trained dogs will hold the hog until the hunter has it tied up, Flott said. Then the hunter signals the dogs to let go.

For killing a hog, Flott recommended using a pump or double-barrelled shotgun, loaded with 00 or #1 buckshot. In addition, he likes to have one person carrying either a rifle or pistol in case the hog turns on the dogs and has to be killed to rescue them, since a boar is easily capable of killing a dog.

A less rough-and-tumble method for taking hogs is still or stand hunting. Flott likened this to stand hunting for deer.

"Get a place where you see a lot of rooting and fresh tracks,"Flott said. "You can either sit and hide somewhere, or get up in a tree and just wait for them."

According to Florida Game and Fresh Water Fish Commission biologists, hogs are unique among the state's wildlife because they are not considered game in all areas. On some state lands hogs are classified as livestock.

The hog is not a native species. It was brought to Florida by Spanish conquistadors, such as Hernando DeSoto. The hogs hunted here today are descendants of those, and technically are feral, not wild hogs.

The Florida Department of Environmental Protection takes the position that the animals are exotic; they don't want them in parks and preserves at all because they interfere with native species. In state wildlife management areas, hunters are allowed to take hogs subject to various regulations during the regular hunting seasons. The U.S. Forest Service doesn't want to offer any protection to hogs, so in the national forests, there are no size or bag limits. On other WMAs, the GFC manages hogs on a sustained yield basis, so there are size and bag limits to try to distribute and control the harvest.

On most private lands, feral hogs can be hunted all year. They're strictly wild things running around that the landowner can do with whatever he wants. However, landowners can't hunt hogs at night unless they apply for and receive a permit from the GFC allowing them to be in possession of a gun and light at night.

BARRY MANSELL

One good public land area in the central part of the state where you can hunt hogs is the Ocala Wildlife Management Area, a 382,000-acre tract in the Ocala National Forest. It is open for hog hunting during the general gun season only, and hunting with dogs is only allowed in certain parts at that time. Stand hunting also is legal, but hunters are not permitted to put out corn or any other bait for the animals.

When people hunt in the Ocala WMA, biologists suggest that sportsmen concentrate their efforts in wet areas. Hogs generally occupy the wetter sites. The Oklawaha River basin, the St. Johns River basin, and any of the wetter areas, they seem to prefer because there's a greater variety of food. During hunting season, the animals are likely to feed on acorns in the swamps.

As its name implies, the Ocala WMA is just a short distance from the city of Ocala. To reach the WMA, head east from Ocala on SR 40. An auxiliary check station is located just inside the boundary of the WMA.

The Richloam Wildlife Management Area in the center of the state is another WMA which supports a good hog population. Hog dogs are allowed in some parts of the area; other parts are reserved for still-hunt areas.

If you like your hunting rough, tough and sometimes dangerous, hogs may be just the game for you. And if you're in the middle part of Florida, check out Ocala and Richloam WMAs for the ultimate Florida hunting experience.

A contemporary outdoorswoman, Carolee Boyles-Sprenkel covers hunting and other topics.

Why Do I Hunt?

By Duke Hammond

Last fall, looking out the kitchen window of our farmhouse, I was noticing the subtle changes in vegetation heralding the arrival of hunting season. My smile elicited a question from my wife.

"What are you grinning about?" Candy asked.

"Thinkin' 'bout huntin'" I confessed.

"Why thinking about sitting up a tree in the cold brings a smile to your face is beyond me!" she said.

"If that's all hunting was, I'd quit!" I said, not really meaning it.

"Well, if you ask me, that's exactly what it is, so why do you hunt?" she asked.

I recall little of what I said. I do remember wishing I had a better answer. I also remember the bewildered expression on her face announcing a lack of comprehension of what on Earth I was talking about.

Soon after our conversation, I'm sure Candy's mind was otherwise occupied. Mine was not. I thought often during the next several months about the answer to her question. "Why do I hunt?"

It was easy to eliminate aspects of hunting that are clearly not reasons I hunt. I don't hunt to sit up in a tree and get cold. I don't hunt for my family's food. I don't hunt to exchange body fluids with flying insects. I don't hunt to watch my favorite animal die from a gunshot wound.

GFC

These are costs I am willing to pay to have the experience. They are not reasons for having it.

My assessment of humans recreating in the outdoors is that they are usually obtrusive in wildlife habitat. Humans have scents, make noises, wear colors and move in ways that are startling to wildlife. I love the outdoors, but I hate being an intruder.

My desire is to become part of a world I've loved since childhood. There is a tranquility in the forest that soothes the turmoil of life. I seek immersion in that world where humans are invaders. I also seek escape from a world of phones, bills and bosses who give orders (sorry Vic).

To accomplish that, I've learned about deer physiology and behavior. I've worn camouflaged clothing washed in special detergents. I've been cold, hot and bitten by mosquitoes. When I've been successful, I've had deer look right at me and take no more notice of me than they would a rock.

Sitting in a tree stand arouses my senses of sight and hearing to a pinnacle of awareness. When the stillness of the woods beneath my stand is interrupted by an approaching deer, I am as excited after 43 years of hunting as I was when I started at the age of 9.

I hunt to experience that success and it doesn't matter to me if anyone else knows I have it.

The death of the deer always triggers mixed emotions. I'm happy I've been successful, but I also feel a sense of sorrow over the death of my favorite animal. I've heard it suggested that I could be satisfied by taking the deer's picture. For me it's simply not true. Shooting the deer makes me a part of the relationship between predator and prey that defines the deer's world. Taking a photograph leaves me an observer.

Finally, hunting gives me a sensation there are no words in our vocabulary to describe. I can no more describe it to you than I can the flavor of a peach. A peach tastes like a peach, and the only way you know how a peach tastes is to eat one.

I know best why I hunt when I'm 30 feet up a tree, 30 minutes before sunrise. Maybe Candy won't understand why I smile about it until she hunts for 40 years.

Duke Hammond works for the GFC to conserve Florida's wildlife.

Wildlife Foundation of Florida, Inc.

For more than 50 years, the Florida Game and Fresh Water Fish Commission has proudly borne the responsibility of managing our wildlife and freshwater fish resources. While we approach the 21st century, the importance of protecting our natural resources will become more critical and our existing resources more precious.

Every Floridian interested in the future of this state needs to be immensely concerned about protecting our natural resources.

The Wildlife Foundation of Florida, Inc. was authorized by the Legislature to assist the Commission with its charge of managing the state's natural resources. In 1994, the Foundation was created as a nonprofit organization to provide funding and promotional support consistent with the constitutional and legislative mandates of the Commission.

Through the Foundation, the public and business community can play a personal role to help protect and enhance Florida's fish and wildlife resources and their habitats. Individual and corporate contributions will be dedicated to supporting and contributing to the health and well-being of Florida's living heritage – its fish and wildlife resources.

The Foundation considers all of Florida's wildlife, including mammals, fish, birds, reptiles, amphibians, invertebrates and their habitats, as vital to a robust ecosystem.

The health and abundance of these precious resources is possible only with the proper management of habitat, people and wildlife. The Foundation's objective is to fund projects related to the following program areas:

- HABITAT CONSERVATION
- FISH AND WILDLIFE MANAGEMENT
- FISH AND WILDLIFE RESEARCH
- EDUCATION AND OUTREACH

Your financial support will help Florida maintain and enhance its astounding fish and wildlife communities now and into the future. Corporations or individuals who would like to make tax-deductible contributions to the Foundation should send checks or money orders to: Wildlife Foundation of Florida, Inc., 620 South Meridian St., Tallahassee, FL 32399-1600. Or call L. Ross Morrell, Registered Agent for the Foundation at (904) 488-4676.

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1996
Cover Art Contest

Deadline for submission of slides: Wednesday, May 15, 1996

PRELIMINARY JUDGING: Send labeled, good-quality 35mm color slides, or transparencies no larger than 4"X 5" of your artwork. Artists may submit up to three entries. Art should fill the entire frame of the slide if possible. Do not send slides of framed art. All slides will be returned after the winning art has been published in the July-August issue. Vertically formatted entries, photographs and entries that do not meet the contest requirements will not be accepted. GFC employees are not eligible.

SUBJECT MATTER: Native Florida species from the following categories are suggested:

- **Nongame species** such as raptors, wading birds, turtles, salamanders, butterflies and birds such as songbirds.
- **Game and fur-bearing species** such as white-tailed deer, wild turkey, bobwhite quail, mourning dove, ducks, largemouth bass, otter, beaver, fox and bobcat.
- **Endangered species** such as the Florida panther, red-cockaded woodpecker, Key deer and American crocodile.

SIZE AND COMPOSITION: Submissions should follow a horizontal 11 x 17-inch format (size of the magazine unfolded) with the main subject placed on the right-hand half of the work (front cover position). Art can be proportionately larger. Remember, the FLORIDA WILDLIFE logo will be placed across the right side, covering approximately 3 inches down from the top. The artist's signature should be well integrated with the painting, preferably placed in the lower right-hand corner. There should be at least 1-2 inches of space from the signature to the bottom and side edges of the art.

MEDIA: Mediums such as acrylics, watercolors, oils, pastels, and gouche are recommended. Colors should be vibrant enough to reproduce well.

AGREEMENT TO PUBLISH: The winning artist's work will be displayed on the cover of FLORIDA WILDLIFE's September-October 1996 issue. The artist will be paid $500 for the cover and rights to publish 1,000 limited-edition, numbered and signed prints. The agreement will specify delivery terms, vest ownership of the original with the artist and provide the Commission with one year's exclusive marketing rights as well as rights to feature the work for future promotions. The artist will receive 25 prints. Honorable mention winners will receive a $50 cash award. FLORIDA WILDLIFE will negotiate the procurement of a 4" X 5" transparency from the winner for better print reproduction quality.

JUDGING: The judges will be looking for originality, anatomical correctness, color, design, mastery of the medium and appropriateness for the magazine's format.

SEND TO: Cover Art Contest, FLORIDA WILDLIFE, 620 South Meridian St., Tallahassee, FL 32399-1600. **Include your Social Security number, daytime phone number and a self-addressed, stamped #10 (or larger) envelope with your entries. Entries must be postmarked by May 15, 1996.**

The magazine staff will provide reasonable care for slides received from artists but cannot be responsible for loss or damage. Artists should include protective padding for envelopes and insure their slides if they feel it is necessary.

Photographers are encouraged to read FLORIDA WILDLIFE March-April 1996 edition for photo contest announcement and rules.

CONSERVATION UPDATE

Compiled by FLORIDA WILDLIFE Staff

WHAT A CROC

The endangered American crocodile has set nesting records in Dade County and near records in Everglades National Park. Turkey Point nuclear power plant in Dade County has 151 miles of canals bordered with sand mounds, which created perfect crocodile nesting habitat. Piles of earth from parking lots and berms near water in the Everglades did the same.

The result was a hatching survival rate which jumped from 5 percent to between 15 percent and 20 percent. Other unintentional boosts to crocodile hatching came in the form of earth piles from illegally dug canals on northern Key Largo.

PROJECT EAGLE SOARS TO WIN ENVIRONMENTAL AWARD

The Game and Fresh Water Fish Commission's Project EAGLE won a 1995 Environmental Public Service Award from Keep Florida Beautiful, Inc., at that organization's annual banquet in Clearwater, October 27. The GFC's executive director, Dr. Allan Egbert, accepted the honor.

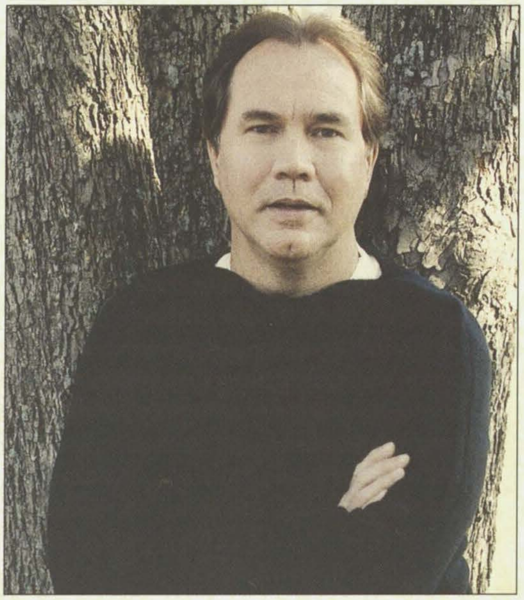
Developed as a pilot program in 1994 to clean up four rivers in central Florida, Project EAGLE grew to a statewide effort this year, involving 2,382 volunteers who cleaned up nearly 75 tons of litter in a half-day, July 22.

WATERFOWL MIGRATION FLYING IN HIGH NUMBERS

Living clouds of ducks graced the skies of North America in spectacular numbers last fall, making their annual migration the largest one in 40 years. Some flocks of the migrating birds were so thick that they interfered with air-traffic radar, forcing temporary halts to flight operations in Omaha, Neb., Des Moines, Iowa, and Kansas City, Mo.

Wildlife researchers estimated 83 million ducks winged their way south this year, up by 24 million from 1993's fall migration.

Conservationists said they were pleased, especially when they considered the precipitous fall of waterfowl numbers during the 1980s. They credited the impressive rise to habitat restoration due to two wet years in the prairie pothole regions of the northern Great Plains and Canada.



DICK SUBLETTE

NEW ASSOCIATE EDITOR ON BOARD

Meet Frank Adams, the new associate editor of FLORIDA WILDLIFE and publications supervisor for GFC. Adams, a native Floridian and graduate of the University of South Dakota, is a journalist with a background in research, photography, editing and writing. Adams confided that, "I was born to edit and write for FLORIDA WILDLIFE." While not at GFC, Adams pursues camping, long-distance bicycling, canoeing, scuba diving and swimming.

IF YOU BUILD IT THEY WILL COME

In 1991 the University of Florida built a $20,000 bat condominium by some organic gardens on campus, hoping the little critters would leave buildings they shared with humans at other parts of the school. But for years the structure languished with no tenants.

Then last winter a few free-tailed bats moved in, and by November 1995, school officials estimated 10,000 had settled there, and predicted the number may rise to 100,000. Now the organic garden has natural pest control and students can study bat behavior.

The Florida Buck Registry

If you're lucky enough to take a really big buck you may wonder how yours stacks up against others in the state. The Game and Fresh Water Fish Commission's Florida Buck Registry answers that question.

The Florida Buck Registry was established in 1982 with two primary goals in mind. One was to provide hunters with a meaningful and understandable record of the number and quality of white-tailed deer taken in Florida. The other was to give some long-overdue recognition to the Florida hunters who have historically contributed to the wildlife management in this state.

Since many hunters are familiar with the Boone and Crockett scoring system, the GFC adopted this method, with Boone and Crockett's permission, for scoring in Florida. This is a GFC program and is not recognized or supported by Boone and Crockett.

Another goal of the registry is to make people aware of what kind of deer management it takes to produce bucks with trophy antlers.

Symmetry is the principal characteristic that makes one set of antlers superior to another in the Florida Buck Registry. The width of the beam at its widest and end points, as well as the symmetry of the points are considered.

Points come off the main beam and measure from base to tip. Irregular points can reduce an overall score.

How to Get Your Buck Entered

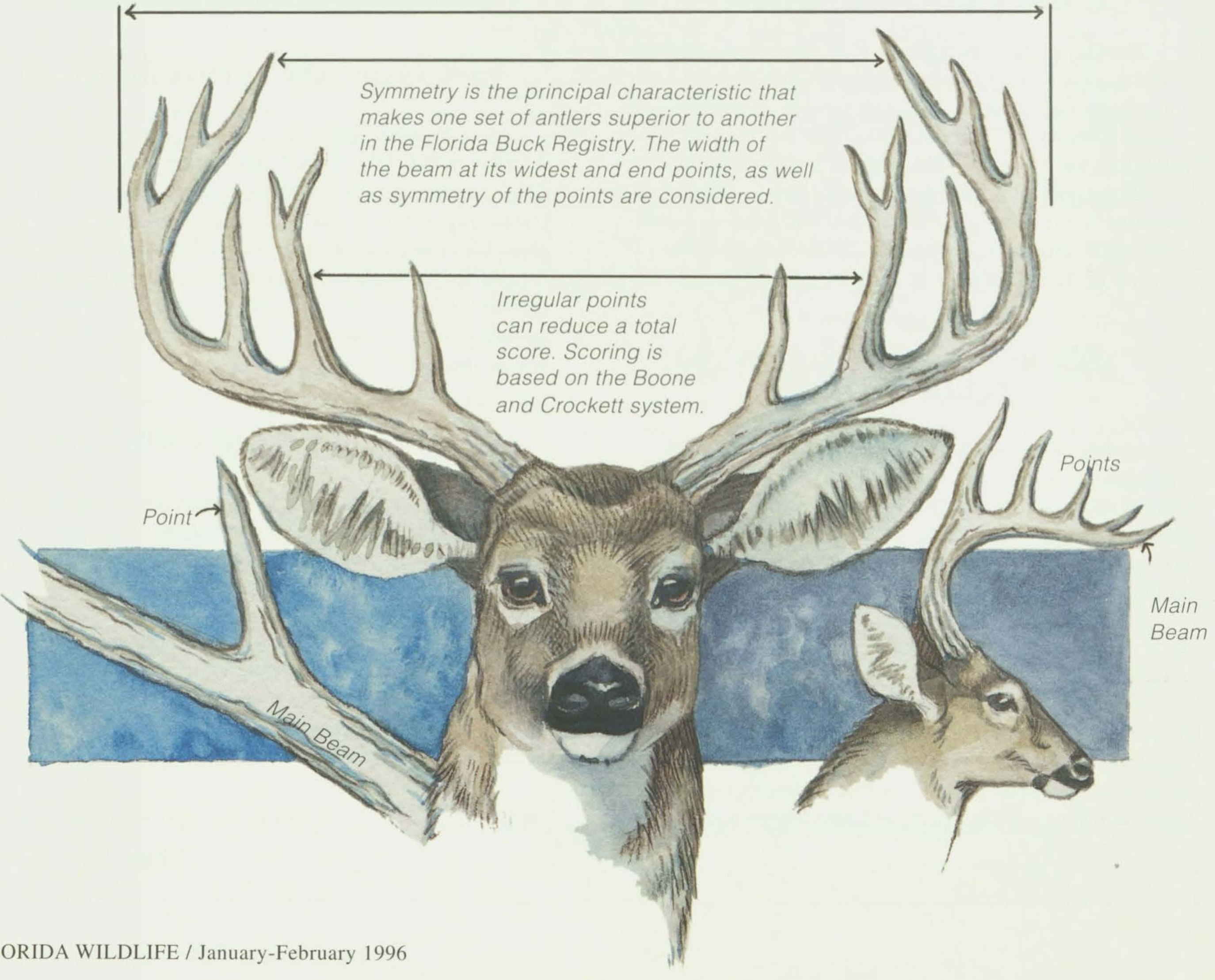
Contact the GFC's office nearest you and ask to speak to the wildlife reserve coordinator. Please see inside the front cover of FLORIDA WILDLIFE for regional office locations and phone numbers.

1. The minimum antler score necessary to qualify for the Florida Buck Registry is 100 Boone and Crockett inches for typical antlers and 125 Boone and Crockett inches for non-typical antlers.

2. All deer must have been taken in Florida.

3. All deer must have been taken legally.

4. Deer taken in any previous season are eligible for entry.


Symmetry is the principal characteristic that makes one set of antlers superior to another in the Florida Buck Registry. The width of the beam at its widest and end points, as well as symmetry of the points are considered.
Irregular points can reduce a total score. Scoring is based on the Boone and Crockett system.
Point
Main Beam
Points
Main Beam

Florida Buck Registry
Top Five in Northwest Region

Name	Location	Date	Score
Larry Furr	Gadsden County	1977	168 1/8
Danny Raines	Jackson County	1973	154 3/8
H. M. Butler	Gadsden County	1979	153 7/8
Nancy Sumner	Liberty County	1981	152 3/8
Ramey Gilley	Jackson County	1964	152 1/8

Florida Buck Registry
Top Five in Northeast Region

Name	Location	Date	Score
Bobby R. Davis, Jr.	Dixie County	1994	159 4/8
Chris Harrel	Madison County	1987	156 7/8
Gary W. Leis	Taylor County	1987	156 5/8
Robert S. Ballard	Columbia County	1980	153 1/8
Lucas Ross	Taylor County	1994	153

Florida Buck Registry
Top Five in South Region

Name	Location	Date	Score
Bill Scharber	Pasco County	Unknown	153 5/8
Mike Sherouse	Hernando County	1970	150 7/8
Pete Wyrosdick	Green Swamp WMA	1989	150 7/8
Charles P. Lykes, Jr.	Highlands County	1977	150 6/8
Max Boswell	Glades County	1990	146 4/8

Florida Buck Registry
Top Five in Everglades Region

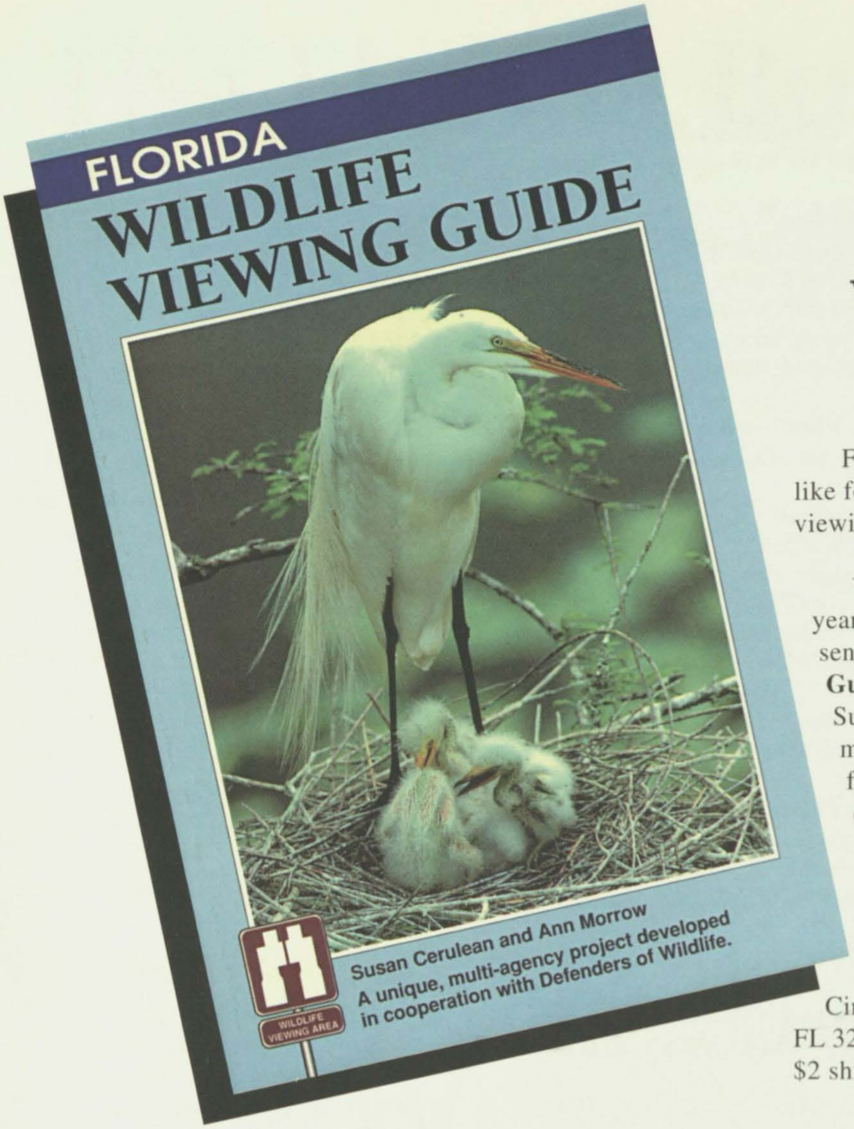
Name	Location	Date	Score
Fritz Stein III	Okeechobee County	1994	149 4/8
G. P. Holly	St. Lucie County	1978	145
Jim Wilson	Indian River County	1985	140
Tom McBroom II	Okeechobee County	1966	140 1/8
Reese Suggs	Martin County	1982	137 4/8

Florida Buck Registry
Top Five in Central Region

Name	Location	Date	Score
Robbie Hastings	Ocala Nat'l Forest	1940	154 3/8
Melvin Arlene	Citrus WMA	1980	152 5/8
Charles Roberts	Fort McCoy WMA	1989	151 4/8
Herbert G.Weagraff	Orange County	1986	149 4/8
Rick Hannis	Brevard County	1985	146 7/8

Florida Buck Registry
Top Five Non-typical Statewide

Name	Location	Date	Score
Clark Durrance	Wakulla County	1940s	201 3/8
Henry Brinson	Jackson County	1959	186
W. L. Hurst	Calhoun County	1970	181 2/8
Tommy Sims	Jackson County	1994	172
Clay H. Mickler	Pasco County	1985	170 4/8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____**New** ____**Renewal**

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